Strong Tight Container Specification
90 cu.ft. Steel Container

Press QC Check List **to see Check List only.**

Description	Stores Catalog Number	Packaging Filling Instructions *
Container, **Epoxy Coated Steel**, ST-90, Waste Disposal, 12 gauge, with bolted lid closure **6 ft x 4 ft x 4 ft** (nominal), **90 cu. ft**, 10,000 pound capacity	119-4500	CHK-07

Mfg. Details Per: DOE Packaging Specifications
No. STC-900-00
Issue Date: February 1, 2000
Revised Date:

*** For future use.**

Company Name Here			
Packaging Specification			
DOT 90 cu ft STC Metal Container			
Specification No: STC-900-00	**Issued: February 1, 2000**	**Revised:**	**Page 1 of 18**

Equipment Specification for metal container meeting Department of Transportation (DOT) strong tight container (STC) and industrial packaging, Type IP-1, requirements; i.e., **90 cu. ft. Metal Container**.

A. DESCRIPTION

Rectangular metal container, (1) painted or (2) galvanized, with metal lid, gasketed lid, bolted closure, and permanently fixed skid runners, 6 x 4 x 4 ft.(nominal) overall dimensions (90 cu ft internally), Department of Transportation (DOT) strong tight container (STC) and industrial packaging, Type IP-1, in compliance with DOT regulations [Title 49 Code for Regulations (CFR)] referenced in this specification.

B. OVERALL SUMMARY

1.0	Identification:	90 cu. ft. Metal Container
2.0	Size:	72 x 46 x 47 in ID (nominal)
3.0	Payload Capacity:	10,000 lb net (4,545.5 kg)
4.0	Volume Capacity:	90 cu ft (nominal)
5.0	Material:	12-gauge low carbon hot-rolled steel
6.0	Stack Height:	Fully loaded boxes, capable of being stacked three (3) high
7.0	Exterior Surface:	Painted or galvanized, as specified; see para. C, 3.0. below
8.0	Drawing:	Manufactured in accordance with Container Drawing Number 90-STC-1097, A and B, attached to this specification.

9.0 Package ID No:

Galvanized container	119-4510
Epoxy-coated	119-4500

C. BASIC INFORMATION

1.0 Skid Runners: These specifications require skid runners to be permanently fixed.

2.0 Lid Gasket: Gaskets are to be securely glued to box lid of each container.

3.0 Exterior and Interior Surface:
This specification designates two surface finishes:
(1) Painted containers to be painted with two coats of epoxy blue paint, 2-1/2 to 3 mils, interior and exterior;
(2) Galvanized containers to be 3.5 mils coating, minimum.

4.0 Lid Lifting Bracket:
Lid lifting devices to be designed for forklift handling and for **LIDS** only; using a single forklift channel.

D. MANUFACTURING REQUIREMENTS

Container Specification No. STC-900-00

1.0 SCOPE

1.1 This specification covers the requirements for a metal container that can be utilized for the packaging of low specific activity (LSA) and surface-contaminated objects (SCO) radioactive material in exclusive use transportation, which meets the DOT requirements for a STC and industrial packaging, Type IP-1.

1.2 Table #1, Offer Data, provides a listing of the items that must be addressed in the Offeror's response. Table #2, provides a listing of the documentation that must be provided after subcontract award and prior to fabrication.

Both attachments provide references to the particular specification section to which a specific documentation requirement applies.

NOTE: Prior to subcontract award, the Company may elect to perform a responsibility survey to verify the Offeror's technical, quality control, and production capabilities, and Offer's ability to supply these containers in compliance with the definitive standards of this specification.

2.0 REFERENCES

2.1 DOT - 49 CFR Part 173.24 and 173.410 [STC] and 173.411(a) and (b)(1) [IP-1]

2.2 American Society for Testing and Materials (ASTM) A569

2.3 American Welding Society (AWS) D1.1, "AWS Structural Welding Code"

2.4 American Welding Society (AWS) D1.3, "AWS Sheet Metal Welding Code"

2.5 American Society of Mechanical Engineers (ASME) Section IX, "Welding and Brazing Qualifications"

2.6 American Society for Nondestructive Testing, Recommended Practice SNT-TC-1A, Dec. 1988

2.7 American Welding Society, Specification for Qualification and Certification of Welding Inspectors, 1988 Edition

3.0 DESIGN REQUIREMENTS

3.1 *Construction Materials*:

3.1.1 *Body:* 12-gauge (minimum) low carbon hot rolled sheet steel meeting ASTM-A569 specifications, or equivalent; i.e., ASTM A-36.

3.1.2 *Lid:* 12-gauge (minimum) low carbon hot rolled sheet steel meeting ASTM-A569 specifications, or equivalent; i.e., ASTM A-36.

3.1.3 *Lid Gasket:* Closed cell neoprene foam gasket material, 3/8" x 1", ASTM D-1056-67, SAE-J-18-SCE42 medium durometer with self adhesive backing on one side; or company approved equal gasket material.

3.1.4 *External/Internal Support:* Any required external and internal support to be fabricated from channel or angle steel. Containers designed for galvanizing must have adequate drainage ports to prevent entrapping the molten metal of the galvanizing process.

NOTE: The material certification for all container steel and gasket material shall be submitted for company approval prior to fabrication.

3.0 DESIGN REQUIREMENTS (continued)

3.2 *Structural Requirements*:

3.2.1 *Payload Capacity:* 10,000 lb net weight (4,545.5 kg).

3.2.2 *Stack Height*: Containers, loaded to design load capacity, must have the capability of being stacked a maximum of three (3) high..

NOTE: Provide proof, as part of the Data for Approval prior to fabrication of the container design load capacity and design stack height in the form of engineering structural calculations or by submission of engineering drawings for an approved container fabrication design that has prior regulatory authority acceptance and meets the stipulated design characteristics and dimensional requirements of this specification.

3.3 *Container Dimensional Design*:

3.3.1 Container Dimensions (nominal)

	Container (*itself*)*	**Lid**
Length	72.0 inches OL	72.25 inches IL
Width	46.0 inches OW	46.25 inches IW
Height	47.0 inches OH	Tolerance variations must allow sufficient clearance between lid and sidewalls such that neither the painted, nor the galvanized surfaces will bind on removal or placing lids on containers.
*(*excludes external channel/angle bracing/closure attachments, etc.*)		

3.3.1.1 Allowable container fabrication design tolerances shall be within +/- 1/4" of the dimensions shown on the container drawings, as approved by the Company, or as specifically specified elsewhere in the specification and/or drawing.

NOTE: Container shall be constructed in such a manner as to maintain the outside container dimensions within design tolerances when loaded to the design load capacity of 10,000 lb net.

3.0 DESIGN REQUIREMENTS (continued)

3.3.2 *Skid Runners;* To provide for ease of retrievability each container shall be fabricated with four (4) each permanently fixed skid runners to provide sufficient clearance under the container to allow enough room to accommodate the standard sized forks of a forklift without requiring additional blocking beneath the container.

Skid runners shall be channel steel, and not "I" beams. Spacing for the two (2) center skid runners shall be incorporated into drawings such that the forklift blades of a standard 10,000 - 12,000 lb capacity forklift can be adjusted to fit ***inside*** these two (2) runners.

3.4 *Container Closure And Sealing Requirements*:

3.4.1 *Lid Construction:* The container lid shall incorporate a bolted lid closure method; with angle channels mounted on the sides of the lid, and the top edge of the container. Bolts, 3/8 inch (minimum) x 1-1/2 inch, will close the container by bolting down on the sides of the container/angle channel with sufficient clearance between lid angle channel and container angle channel to compress the gasket without the bolt channels coming into contact with each other.

3.4.1.1 Lid will be bolted with twelve (12) bolts, three (3) each per container side, with two (2) flat and one (1) lock washer.

3.4.1.2 Bolt holes will be three (3) inches, nominal, from the corners of the containers, as measured equally from the center bolt holes in the container, to assure bolt hole alignment.

3.4.1.3 Container bolt holes to be minimum of 7/16 inch with oblong holes in box angle; long axis parallel to the sidewall, and minimum of ½ inch. Lid bolt holes 7/16 minimum.

3.4.1.4 Stainless steel bolts and nuts will be utilized or plated bolts/nuts having stronger torque resistance than the same size SS bolts/nuts.

3.4.1.5 For delivery, lids will be bolted with two (2) bolts; one (1) at center of each short side; balance of the required bolts, nuts, and washers will be shipped in a bag inside each container.

3.0 DESIGN REQUIREMENTS (continued)

3.4.2 *Forklift Bracket (channel):* A forklift lifting bracket (channel) shall be incorporated into the lid design to provide a means by which the lid can be safely manipulated during container opening and closure with a standard size forklift. The requirement for the lid lifting bracket to comply with ¶173.410(b), 49 CFR is waived.*

***[NOTE:** *See Attachment 1 for an exception granted by the DOT. The "ST-5" package referenced in Attachment 1 has the same lid channel as this DOE 90 ft^3 box. However, the balance of ¶173.410 does apply -- ref. Section 4.1, Construction Specifications.]*

3.4.2.1 Forklift bracket shall be designed only for the purpose of lifting the lid weight.

3.4.2.2 Forklift bracket shall be permanently affixed to the container lid by welding.

3.4.2.3 Forklift bracket is not designed to lift an empty, filled, or partially filled container.

3.4.2.4 Forklift bracket is to consist of a single metal channel at center of lid, which is to be strip welded to lid, parallel to short side of container, and for insertion of single blade for lid lifting purposes only.

3.4.3 *Gasket materials* shall be glued secure to the lid, such that it provides a continuous sealing surface around the entire circumference of the lid/container contact surface, including the corner joints.

An option, ONLY, if specifically stated in the contract, the previously specified gasket material will be provided separately with each container and have an adhesive backing to provide for ease of application by the Company's container end user. Each container's gasket material shall be placed inside the container, in a roll, when shipped to the Company's facility.

3.5 *Container Finish Requirements*:

3.5.1 All container edges and/or surfaces shall be fabricated to minimize sharp edges and protrusions, any edges that do exist on the container shall be ground to minimize personal hazards.

3.0 DESIGN REQUIREMENTS (continued)

3.5.2 Painted Containers:

3.5.2.1 All container interior and exterior surfaces shall be prepared and cleaned of all solvent residue, oil, and other materials prior to painting to ensure adequate paint bonding, uniformly, and proper mil thickness without paint running.

3.5.2.2 All container interior and exterior surfaces shall be painted with two coats of the base finish paint coating, which will be a rust proof, lead-free, epoxy paint. Total paint thickness, for both initial and final paint finish coatings, will be a minimum of 2-1/2 to 3 mil dry film thickness (DFT) on all surfaces.

3.5.2.3 Paint color to be blue, Polyamide Epoxy, PPG 97-11 or equivalent, unless stated otherwise in the contract.

3.5.2.4 Finished, painted surfaces upon visual inspection shall appear smooth and free of any visible pits or imperfections.

3.5.2.5 Painted surfaces shall be allowed time to completely dry prior to placement of the lid onto the box to prevent the lid and gasket from adhering to the box at the time of initial container usage at the Company's facility.

3.5.3 Galvanized containers:

3.5.3.1 The overall galvanizing process shall be performed in accordance with ASTM A123-89a, ASTM A143-74, ASTM A153-82 and ASTM A385-80. The galvanizing bath shall be in conformance with ASTM B6-77. The galvanizing shall be performed in a single dip in accordance with ASTM A384-76.

3.5.3.2 The galvanizing coating thickness shall be a minimum of .0035 inches (3.5 mils), and nominally not exceed .008 inches (8.0 mils).

3.5.3.3 Passivation quenching is optional; however, passivation quenching can not be used if it warps the steel containers more than that obtained during the galvanizing process.

3.0 DESIGN REQUIREMENTS (continued)

3.5.3.4 All dirt build-up on the container surfaces from the galvanizing process must be removed by a suitable cleaning process, which will not deteriorate the galvanized surface. Passivation quenching will normally accomplish this requirement.

3.5.3.5 In addition, containers manufactured for galvanizing, require two (2) each lifting attachments mounted on one (1) side, ten (10) inches from container bottom, for submerging containers. Drain holes are also required in the top edge-lip, and all closed support/brace channels.

3.6 *Container Identification*:

3.6.1 *Location;* Offeror's fabrication data shall be legibly marked, at a minimum, on one of the container long dimensions (front or back) and on one of the container short dimensions (either side), with a stainless steel plate (in the 6 x 4 inch range), mounted in the upper left hand corner.

3.6.2 *Identification Marking Specifications;* Offeror's fabrication data shall be permanently affixed to the container in the specified locations in accordance with the following:

3.6.2.1 Identification marking on the plate will be stamped permanently into the plate surface, and shall be sharp, durable, and capable of being easily read (preferable with black background letters). The lettering height for the identification marking shall be in the range of 3/8 to 5/8 of an inch.

3.6.2.2 The container identification plate shall be attached by a permanent and secure method that shall not have any detrimental effects on the container integrity.

3.6.3 *Off7j 29.76ld-88 10.8 Ttione10 mou-0.090121.06.1021 Tw (permaror's fabr30imensions*

3.0 DESIGN REQUIREMENTS (continued)

3.6.3.4 Container Lot Number - *marking separately on the container is allowable, in plate proximity*

3.6.3.5 Container Serial Number

3.6.3.6 Container Tare (empty) Weight (lb) [Ref: ¶3.7]

3.6.3.7 Container Maximum Net Weight (lb) [10,000 lb; Ref:¶3.2.1]

3.7 *Tare Weight Determinations*:

3.7.1 Scales for determining Tare Weights will be certified, and capable of weighing within plus (+) or minus (-) two (2) pounds.

3.7.2 The tare weight will be determined on a lot of containers in accordance with:

3.7.2.1 For galvanized containers, each will be weighed.

3.7.2.2 For painted containers, five (5) percent of the lot, randomly sampled, will be weighed, with a minimum of five (5) containers, and the average computed for the lot.

NOTE: A lot will be defined as a batch/quantity of containers made all in the same production run, with the same batch of material, and identified on the container by the lot number (with the serial number) for each order of containers purchased by the Company.

3.7.3 The tare weight will be marked (stamped, printed) on the container ID plate per ¶3.6.3.6.

3.7.3.1 Galvanized containers will be marked with the actual container weight.

3.7.3.2 Painted containers will be marked with the calculated average weight from the sampling.

3.7.4 The container tare weights will be marked to the nearest one (1) pound.

3.0 DESIGN REQUIREMENTS (continued)

NOTE: Certificate of Compliance (CoC) requirements are stated under Quality Provisions, ¶5.6.2.

3.8 *Fabricator Preconstruction Deliverables*:

3.8.1 Prior to beginning fabrication, the Approval Data listed in Table #2 shall be submitted for the Company's review and approval.

4.0 CONSTRUCTION SPECIFICS

4.1 Container construction shall meet the requirements of a 'strong, tight container' as defined and specified by DOT in 49 CFR 173.24 and 173.410 and as an industrial packaging; Type IP-1, ¶173.411(a)and (b)(1).

4.1.1 Container fabrication shall be such that no weld seams shall be used to piece together smaller pieces of material to fabricate the main box structural panels. Additionally, no through weld seams will be allowed across any of the main box structural panels on the four (4) container sides, lid, or bottom other than those welds required at the container corners to join interfacing panels.

4.2 Container design shall be per Container Drawing Number 90-STC-1097, A and B, attached to this specification. Any container design modifications/revisions must be submitted in writing, and approved in writing by the Company prior to the manufacture of any containers under the purchase order/contract.

4.2.1 Standard engineering drawing dimensioning for manufacturing purposes,

4.2.1.1 Container engineering drawings shall include as a separate drawing a depiction of the sheet steel bending diagrams which will indicate the sheet steel size, required sheet steel cuts, and sheet steel bends which will be utilized in the fabrication process for each of the container panels.

4.2.2 Internal container dimensions available for the waste volume.

4.2.3 All container welds shall be clearly identified and appropriately annotated to indicate the size and type of weldment used in the container fabrication.

4.0 CONSTRUCTION SPECIFICS (continued)

4.2.4 All container design features, such as, lid lifting bracket, closure mechanisms, forklift base channels, etc. shall be clearly identified and dimensionally annotated to indicate specific design characteristics.

4.2.5 State the container design internal container dimensions, waste volume capacity in cubic feet (ft^3), container burial volume in cubic feet (ft^3), design payload capacity (lb), and maximum design loaded gross weight (lb).

4.3 Container body construction shall meet the requirements as prescribed in this specification under **3.0 REQUIREMENTS.**

5.0 QUALITY PROVISIONS

5.1 The Company shall have the right of access to witness the manufacturing process involved in the fabrication of the requested containers.

5.2 The Company shall be notified within a minimum of 10 working days in advance of the initial container fabrication, in accordance with this specification, to allow for the opportunity at the Company's discretion to witness container fabrication at a mutually agreeable date and time.

5.3 All welding procedures and welder certifications shall be in accordance with requirements of AWS D1.1, "AWS Structural Welding Code," AWS D1.3, "AWS Sheet Metal Welding Code," ASME Section IX, "Welding and Brazing Qualifications," as applicable, or other equivalent code which requires mechanical testing of weld coupons.

5.3.1 The welding procedures and PQRs and welder certifications (including updates) shall be submitted to the Company as part of the Offer Data.

5.4 Weld container inspection shall consist of the following:

5.4.1 A visual inspection of one hundred percent (100%) of each container's welds (both container and lid) shall be performed in accordance with AWS D1.1, Section 6 or AWS D1.3, Section 7, and documented accordingly. Acceptance criteria is per AWS D1.1, Section 8.15.1 or AWS D1.3, Section 4.5.

5.0 QUALITY PROVISIONS (continued)

5.4.2 Examination Personnel Certification Requirements--personnel performing visual examination of welds shall be currently certified either as an AWS CWI or in accordance with the requirements of SNT-TC-1A, or work under direct supervision of an SNT-TC-1A Level II, III, or CWI. If certified to SNT-TC-1A, satisfy the training and experience requirements by time spent in weld examination related work. (Reference: AWS QC-1, Specification for Qualification and Certification of Welding Inspectors, 1988 edition.)

5.4.3 The production water 'float' test is not required; however if performed as a production test, then documentation on the tested containers fabricated should be recorded, percentage tested, and the test should be such that the containers will submerge all weld seams on the container bottom panel and the welds up the side panels.

5.4.3.1 As part of the Offer Data, responding Offerors shall include a procedure detailing the Offeror's 'float' test which specifies the amount of time the container will be floated.

5.4.4 A copy of the Offeror's quality control (QC) manual and associated procedures shall be provided as part of the Offer Data.

5.5 The Offeror shall have established or initiate a mechanism by which each manufactured container is assigned a container fabrication serial number that will allow for the tracking of container fabrication through the entire manufacturing process.

5.6 The following container specific documentation shall be provided upon delivery of each container and shall include, at a minimum:

5.6.1 Offeror's inspection records for the following:

5.6.1.1 Visual inspection results of each container's welds (both box and lid) as specified by the Offeror's QC requirements,

5.6.1.2 Container 'float' test results and associated weld seam inspection results of each container as specified by the Offeror's quality control requirements,

5.6.1.3 Dimensions inspected meet specifications/drawing requirements.

5.0 QUALITY PROVISIONS (continued)

5.6.1.4 Paint minimum dry film thickness (DFT) verification results for the container's primer and finish coat (2.5 mil minimum on all interior and exterior surfaces).

5.6.1.5 Inspection results for the condition of the following container components: container closure mechanism, lid lift attachment on the container lid.

5.6.2 Certificate of Compliance (CoC) to this Specification shall be provided by the supplier on suppliers letterhead paper and signed by employee of the supplier:

5.6.2.1 The Supplier has manufactured the 90 cu. ft. containers in accordance with these Company specifications provided the supplier.

5.6.2.2 The Supplier shall certify that the equipment utilized to determine the tare weight is part of a routine calibration system and that the scale used has been calibrated to be accurate within plus (+) or minus (-) two (2) pounds.

5.6.2.3 The Supplier must provide, for painted container orders, the “standard deviation” for those containers randomly sampled for the tare weight average.

5.6.3 All Container Deviation Reports and Non-Conformance Reports.

All manufacturing deviations and non-conformance to the Company specifications must be documented to the Company, and a request for waiver or deviation submitted with specific details, and approved by the Company prior to delivery of the container.

NOTE: The above specified container documentation shall be identified to the unique container fabrication serial number, be complete, and authenticated by a cognizant representative of the Offeror's quality control section. One (1) copy of each set of documentation specifically identifying the inspected container(s) shall be submitted with each shipment received by the Company.

5.7 As part of the Offer Data, Offerors shall provide a copy of the documentation described in Section 5.6.

5.0 QUALITY PROVISIONS (continued)

5.8 The Company may perform shop inspections at the Offeror's fabrication facility for approved drawings, procedures, welder certifications, materials, workmanship, suspect/counterfeit parts, and documentation prior to container shipment. The Offeror will be notified in advance of the shop inspection and the inspection times will be established and mutually agreeable between the Offeror and the Company's representative.

5.9 The Offeror shall notify the Company upon fabrication completion of the first lot of containers prior to painting. The Company's inspector shall be afforded the opportunity to perform first article weld fabrication container source inspection prior to container painting. Any identified deficiencies will be corrected prior to painting. The Company's inspector will be notified of container deficiency correction and be allowed the opportunity to reinspect the containers prior to container painting.

6.0 PACKAGING AND HANDLING

6.1 *Container Storage At The Offeror's Facility* - container storage shall be in such a manner as to ensure the inside of the containers will remain dry and no accumulated moisture will be present in the containers prior to shipment to the Company.

6.2 *Container Packaging For Shipment* - each container shall be packaged in a manner to ensure safe delivery and comply with all carrier's regulations.

6.2.1 Containers loaded for shipment to the Company will be tied down in such a manner so as to avoid any damage and/or distortion to the container during transportation which would cause design tolerances to be exceeded.

6.2.2 Containers shall be packaged for shipment to the Company in such a manner as to ensure the inside of the containers remain dry during transport.

7.0 RECEIPT INSPECTION

7.1 Final acceptance of each shipment received at the Company's site will be upon the Company's verification that the following documentation requirements have been met:

7.1.1 *Container Documentation (For Each Container)* as prescribed in this specification under 5.0 QUALITY PROVISIONS, Section 5.0 and

7.0 RECEIPT INSPECTION (continued)

7.1.2 *Container Data Markings;* as prescribed in this specification under 3.0 REQUIREMENTS, Section 3.6, Offeror's Approval Data.

7.2 *Receiving Inspection*: The receiving inspection will be performed using the QC checklist. Verification that no shipping damage has been incurred during transport to the Company is included. Minor paint scratches will not be reason for rejection.

Table # 1
Offer Data

Item No.	*Specification Section*	*Deliverable Description*
1	5.3.1	Provide a copy of all applicable fabrication welding procedures for Company's review.
2	5.4.4	Provide a copy of the Offeror's QC manual.
NOTE : Offers may not be considered if the Offer Data is not provided.		

Table # 2
Data for Approval – Prior to Fabrication

Item No.	*Specification Section*	*Deliverable Description*
1	3.1.3 Note	Provide material certification for steel used for the fabrication of the container body and lid.
2	3.1.3 Note	Provide material certification for the container lid gasket material.
3	3.2.2 Note	Provide proof of the container design load capacity and design stack height for Company's review and approval.
4	5.3.1	Provide a sample of applicable welder certifications for the fabrication personnel who will be performing welding operations during container fabrication for Company's review.
5	5.4.2	Provide random container selection, fabrication lot size determination, weld spot check for Company's review as specified in this section of the specifications.
6	5.4.3.1	Provide a description of the Offeror's fabrication facility "float test", when used as a production test.
7	5.7	Provide copy of the Offeror's specific forms which address each of the container requirements described in Section 5.6 of this specification.
8	4.2	Provide a copy of the finalized container detail design drawings for the Company's review and approval.

RECEIVER INSPECTIONS:

The following inspections will be performed on the incoming containers by the Company to determine whether the containers meet quality standards and the requirements of this specification document, and the contract. However, the receiver is not limited to the below inspections to determine quality and specification conformance. Conformance will be indicated by a Y or N in the "Y/N"column, and negative responses documented and attached to the checklist.

This Checklist is to be reproduced for QC Inspections.

Receiver Inspection Quality Control (QC) Check-list for Incoming Containers:			
	QC Conformance	*Y/N*	*<< "No's" are to be documented, and attached to this checklist.*
1	Dimensions (¶D.3.3.1)		Containers meet nominal dimensions stated in this specification.
2	Container Lids (¶D.3.3.1)		Lids fit containers without binding sidewalls; easily removable.
3	Lid Closures (¶D.3.4.1)		Closure bolt holes are aligned; bolts (12) supplied, with nuts & washers.
			Closure bolts are SS or plated; 3/8 inch minimum, 1-1/2 inch.
4	Exterior/Interior (¶D.3.5; D.6.2)		Painted blue or galvanized per this specification
			No significant scratches, corrosion, dents, bare metal areas, etc.
5	Lid Bracket (¶D.3.4.2.2)		Forklift bracket permanently installed on the lid per this specification.
6	Lid Gasket (¶D.3.4.3)		Gasket in good condition; no tears, etc.; and securely glued in and around lid - no gaps.
7	Exterior Bracing (¶D.4.1.1)		All welds "in-tack" (no breaks) and showing no corrosion in seams, etc.
8	Name Plates (¶D.3.6.3)		Two each SS ID name plates on each container; located and marked per this specification; securely affixed to the container sides.
9	Skid Runners (¶D.3.3.2)		Four each forklift steel skid runners permanently mounted on bottom of container, per this specification.
10	Certificate of Compliance (¶D.5.6.2)		Certificate of Compliance shall be provided per this specification.

Drwg / Id Number _____ P. O. Number_____

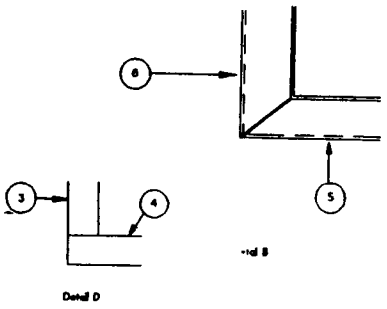
Total Units Received_____ Inspection Method: Per QC Inspection Plan

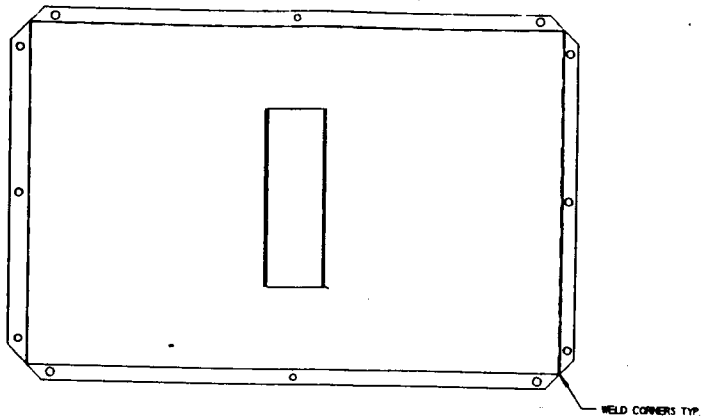
Sample Size:____[Based on ANSI/ASQC Z1.4-1993] Equipment Used:_____ Id #_____

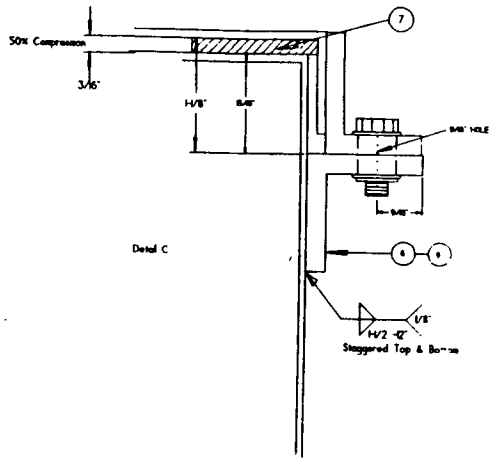
Inspector/Date: _____ Calibration Date:_____

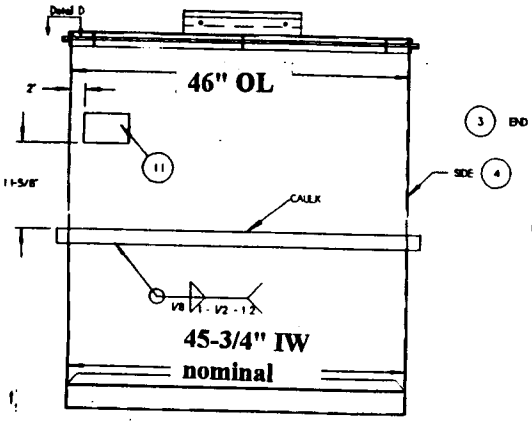
MFG. Certification/Test Report Received:_____ If additional comments are provided on back, check yes ____.

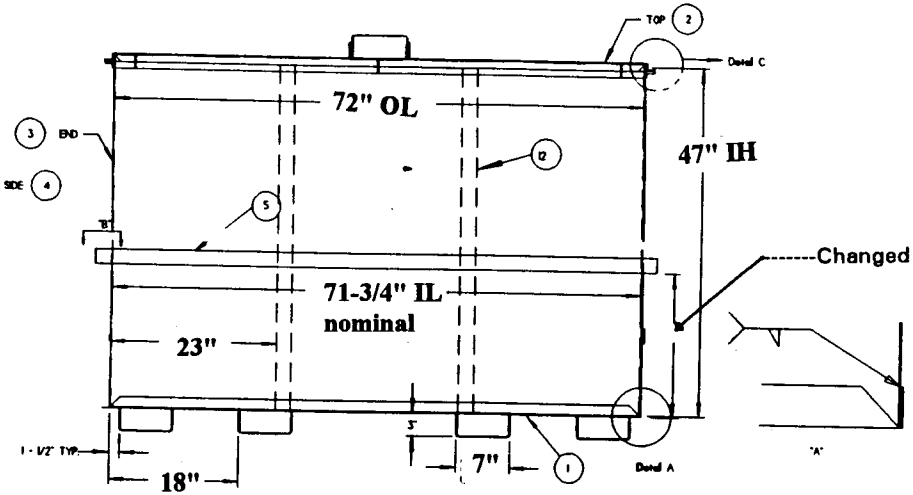
This QC inspection check list shall be accomplished for each order, based on random samples of the received containers, by QC personnel to determine manufacturer's conformance to the specified packaging specifications.











Changed to: 29-1/2

Payload Requirement: 10,000 pounds

Dwt No	Qty.	Description	Matl	Part No
12	4	Vertical Support Channel	1" x 2" x 46-3/4"	
11	1	Nameplate	4" x 6" x 1/16" SS	
10	12	Hex Bolt, 2 F.W., 1 L.W., Nuts	3/8" x 1-1/2" Grade 5	
9	2	End Latch Plate Angle	1-1/2" x 1-1/2" x 3/16" x 46" A-36	
8	2	Side Latch Plate Angle	1-1/2" x 1-1/2" x 3/16" x 72" A-36	
7	1	Gasket	3/8" x 1" SCE 41	
6	2	End Brace Channel	2" x 1" x 48" 12 GA. ASTME A-56	
5	2	Side Brace Channel	2" x 1" x 74" 12 GA. ASTME A-56	
4	2	Side Plate	48" X 71-3/4" 12 Ga. ASTM-A569 HRS	02025
3	2	End Plate	48" X 45-3/4" 12 Ga. ASTM-A569 HRS	02024
2	1	Top Assembly	ASTM-A569 HRS	03323
1	1	Bottom Assembly	ASTM-A569 HRS	03019

Rev.	Description	Date
A	Change per Customer Request	05/96

Tolerances: XX Decimals \ .03; XXX Decimals \ .005; Fractions \ 1/16"; Angles \ 1°; Finish

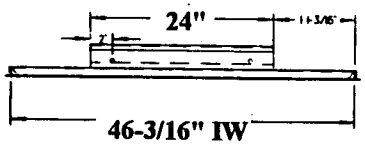
Des	X	04/96
Drn	VALERIE HAWKINS	04/96
Ch.	C. Parke	04/96
Date		10/97

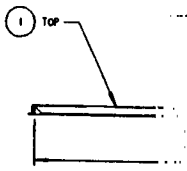
DRAWING NO. 90-STC-1097A

90 cu. ft. Steel Container

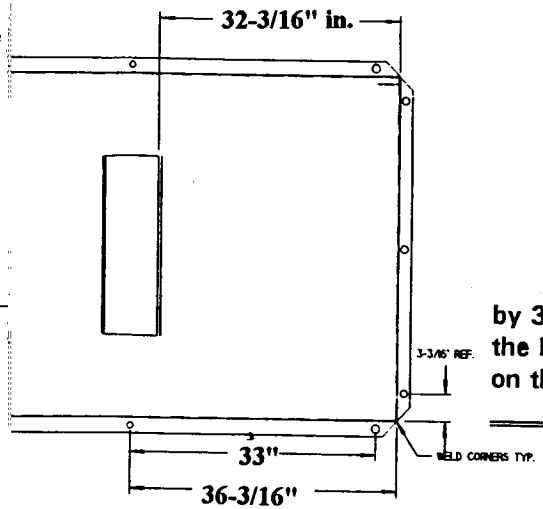
Scale: NTS | Drawing # | Sht 1 of 2

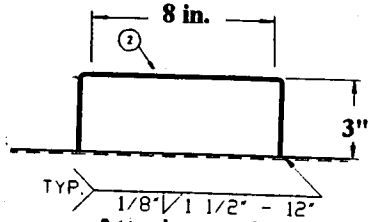
3-3/16"



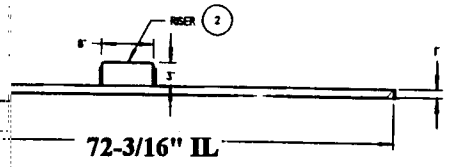


NOTE: Lids must be

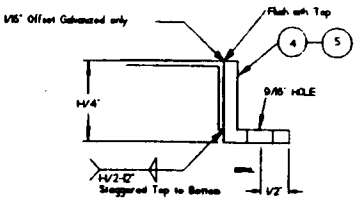




Attachment is to be by 3 inch strip welds, directly to the lid, at each of four corners, (min) on the outside of bracket.(10/1/97)

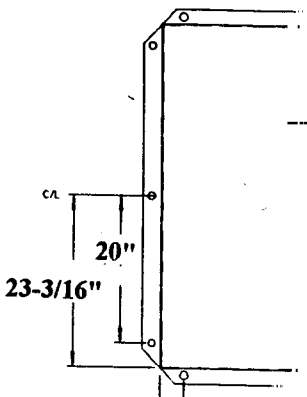


nterchangeable between containers.



NOTE Latch Plate - Both Lid & Box
1. Locate midpoint and mark
2. Punch hole
3. Using locating pin punch remaining holes

ASSEMBLY
1. Locate and mark midpoints of ends and sides (0.5 Dia)
2. Match midpoints to latch plate and weld



6	4	Machine Screw		
5	2	Latch Plate Angle	1-1/4" x 1-1/4" x 3/16" x 72-1/4"	
4	2	Latch Plate Angle	1-1/4" x 1-1/4" x 3/16" x 46-1/4"	
3	2	Lifting Lug Attachment	2" x 24" 12 Ga. ASTM A569	
2	1	Lifting Lug	12 Ga. ASTM-A569 H.R.S.	0238
1	1	Top	12 Ga. ASTM-A569 H.R.S.	0236
Det. No:	Qty.:	Description	Mat'l	Part No:

A	Change per customer request	05/96
Rev	Description	Date

Tolerances			
XX Decimals \ .03	Angles \ 1°	Des. K	04/96
XXX Decimals \ .005	Finish	Dr. VALERIE HAWKINS	04/96
Fractions \ 1/8"		Ch. C. Parks	04/96
			Date

DRAWING NO. 90-STC-1097B

12 Ga. Container. Top Assembly

10/97 Scale: NTS Drawing # Sht 2 of 2

U.S. Department of Transportation
Research and Special Programs Administration

400 Seventh Street, S.W.
Washington, D.C. 20590

FEB 14 1997

Mr. Douglas F. Stancell
Transportation Safety
Department of Energy
Post Office Box 2001
Oak Ridge, TN 37831

Dear Mr. Stancell:

This is in response to your letter regarding the requirements of 49 CFR 173.410(b). Specifically, you ask for our Office's opinion of the intent of the phrase "... which could be used to lift the package must be capable of being rendered inoperable for lifting the package during transport or must be designed with strength equivalent to that required for lifting attachments" with regard to several packagings that are used by the Department of Energy. I apologize for the delay in responding and hope it has not caused any inconvenience.

It is the opinion of this Office that the phrase "could be used to lift" includes only those structural parts of a packaging that could reasonably be considered as a means to lift the packaging. We do not believe that the structural parts of the packagings that were shown in your letter (e.g., the single channel to the center of the lid of the ST-5) could be used to lift the packagings. Therefore, those structural parts of the packaging are not subject to § 173.410(b).

I hope this satisfies your request.

Sincerely,

Delmer F. Billings
Chief, Regulations Development
Office of Hazardous Materials Standards

June 28, 1996

Mr. Edward Mazzullo, Director
Office of Hazardous Materials Standards (DHM-10)
Research and Special Programs Administration
Department of Transportation
400 Seventh Street SW
Washington, DC 20590

Dear Sir:

The Department of Energy (DOE), Oak Ridge Operations Office is requesting clarification from the Department of Transportation (DOT), Research and Special Programs Administration (RSPA) concerning 49 CFR 173.410, General design requirements. Specifically, we are requesting clarification as to the phrase, "could be used to lift the package", in paragraph (b) of this section. We find the phrase subjectively vague and wish to understand how RSPA interprets the requirements in this paragraph.

This issue has recently come to fore concerning the use of a metal box, the ST-5 [illegible] extensively by our contractors as a strong tight container, or excepted package for low-level radioactive waste. There have been informal discussions between DOE/HQ EM-761 and RSPA concerning this packa
ge, however there has not been a formal interpretation provided. For this reason, we are seekin
g a formal response and clarification and are providing additional technical information concernin
ng the ST-5 and our operations to assist RSPA in making a determination.

6, section 173.410 became applicable for all excepted radioactive material Effective April 1, 199
DOE/Oak Ridge community, this impacts several types and designs of packages. Within the
rums, boxes, and bulk containers. The ST-5 metal box is one of these packages, including d
was no grandfathering of previously authorized packages, 173.410 had an packages. Since there
approximately 15,000 ST-5 containers in Oak Ridge. immediate impact on

A's interpretation of "could be used", approximately 500-1,000 additional Depending upon RSP
ected at our Oak Ridge facilities. Modification of these containers represents packages could be affe
ve have been informally told that stenciling "do not lift" would not be a significant cost, as w
estionable package structures must be physically altered. sufficient, and that qu

ed with bottom channels to facilitate lifting the container from the bottom, The ST-5 is constructe
lid of the ST-5 is quite heavy and awkward; and for manual placement and using a fork-lift. The
[illegible] removal requires mu
manual lifting. Consequently, a single channel was added to the center of the associated with this
bility and mechanical lifting of the lid. This lid channel was not designed to lift lid for structural sta
with or without contents. Additional information on the ST-5 is provided as an the entire package,

attachment for your consideration. We have also included photos of other packages that are used in Oak Ridge that will be impacted by your decision. These packages are not unique to Oak Ridge and are used throughout the DOE system, as well as private industry.

In applying the provisions in 173.410, we contend that some judgement must be appl evaluating whether or not a structural part of the package could be used to lift the pa understanding of the intent of this section is to prevent the inadvertent use of a packa which is not designed for package handling operations.

In meeting this intent, we believe we should balance this safety requirement with rea experience. All of our hazardous materials operators that lift packages are trained ex conducing safe lifts. This is also true of our carrier personnel and of the personnel r packages at other DOE facilities and NRC licensees. A trained and knowledgeable f operator would not look at the ST-5 and attempt to lift it from the top. This package in Oak Ridge since 1988, and no one has ever attempted to lift it by the lid.

We do not believe that it was RSPA's intent to base this requirement on the premise t not qualified in lifting operations would be handling the packages. RSPA's training r obligate the hazmat employer to train its employees as to the applicable requirements radioactive material packages. We would like to suggest that clarifying language be a paragraph that would allow for the judgement of qualified personnel in determining i feature could be misconstrued as an appropriate lifting device.

If packaging handling by unqualified personnel was the basis of RSPA's intent, then every package used in the DOE complex would have to be considered for modificatio kind under this section. An unknowledgeable individual, given enough time, could cr come up with a way to improperly handle every package. Attempts to address this wo needless waste of public funds without any added safety benefit.

If this was the intent, we ask that RSPA reconsider this position, as the probability of u personnel handling these containers is extremely low. As a minimum, any facility han container would be subject to lifting requirements under OSHA, and combined with th requirements under RSPA, assurance is high that only knowledgeable individuals wou responsible for lifting these containers.

Additionally, we have safety concerns with rendering some packaging structures inope creates industrial safety concerns with tie downs, package placement, and requiring man mechanical lid lifting.

Thank you for your assistance in clarifying these issues in a timely manner. Questions c this request may be directed to Dana Willaford, DOE/OR, SE-33 at 423-576-5338.

Sincerely,

Douglas F. Stancell
Transportation Safety
DOE/OR, SE-33